JC828 U.S. PTO 10/086396 02/28/02

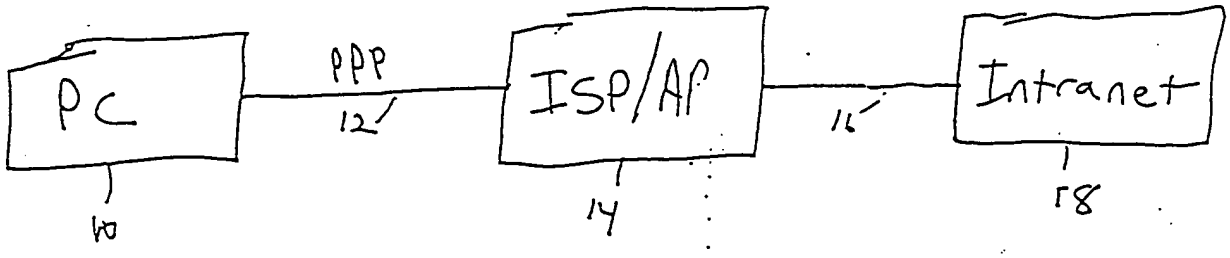

FIG. 1

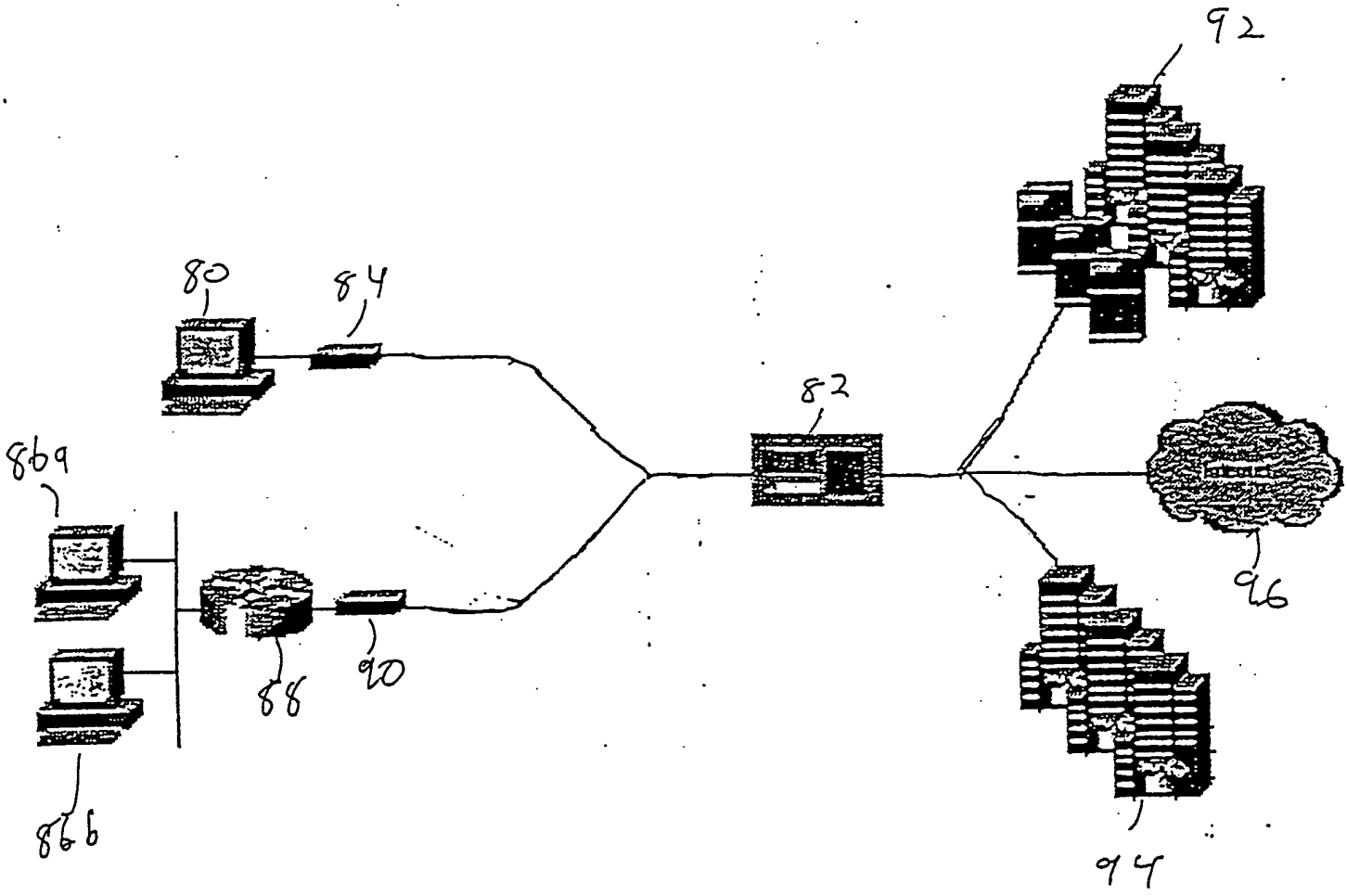

FIG. 2

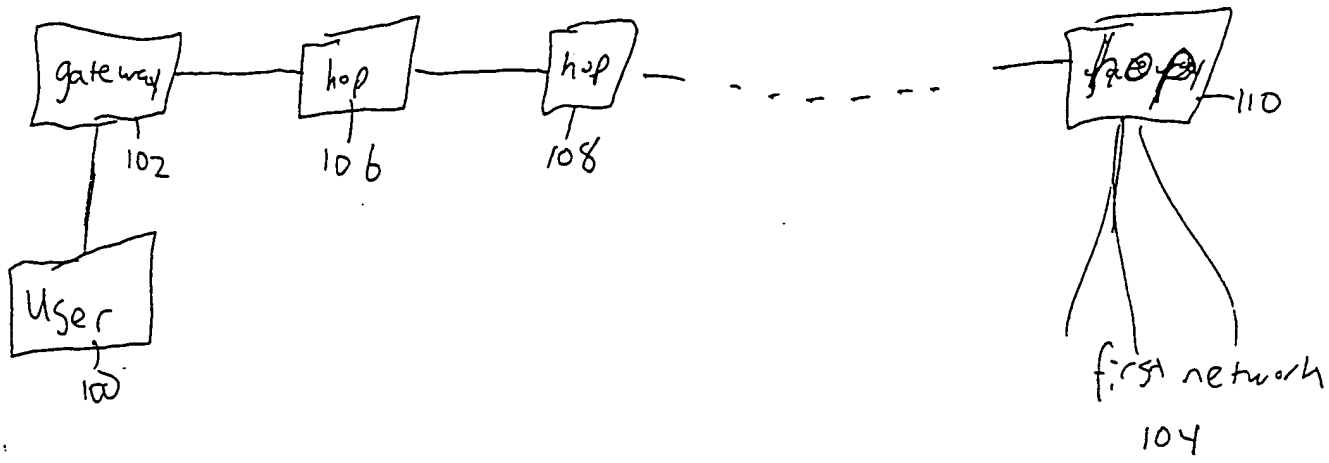
gateway
hop
hop
hop
110
102
106
108
User
100
first network
104

FIG. 3

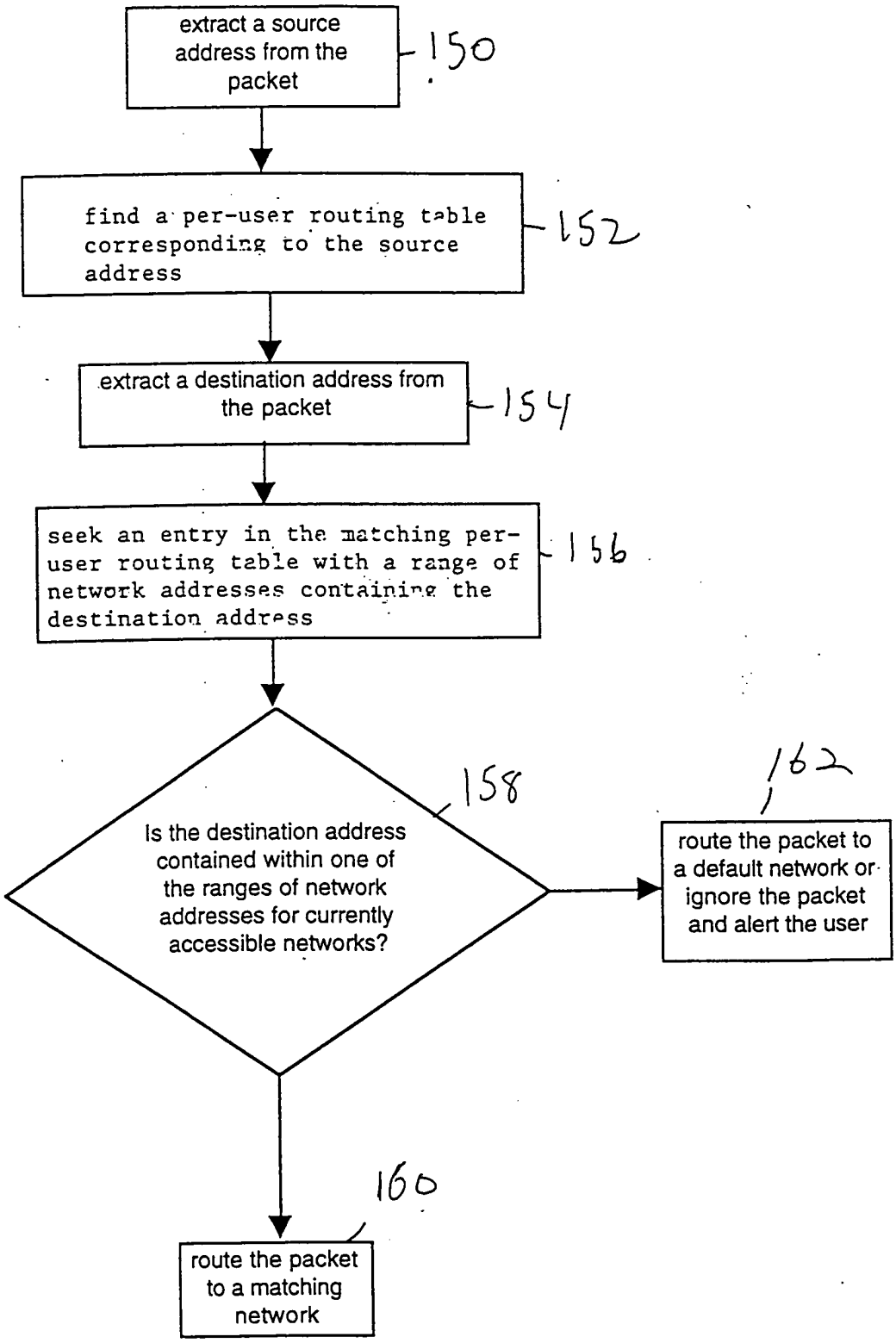
extract a source address from the packet
150
find a per-user routing table corresponding to the source address
152
extract a destination address from the packet
154
seek an entry in the matching per-user routing table with a range of network addresses containing the destination address
156
Is the destination address contained within one of the ranges of network addresses for currently accessible networks?
158
route the packet to a default network or ignore the packet and alert the user
162
route the packet to a matching network
160

FIG. 4

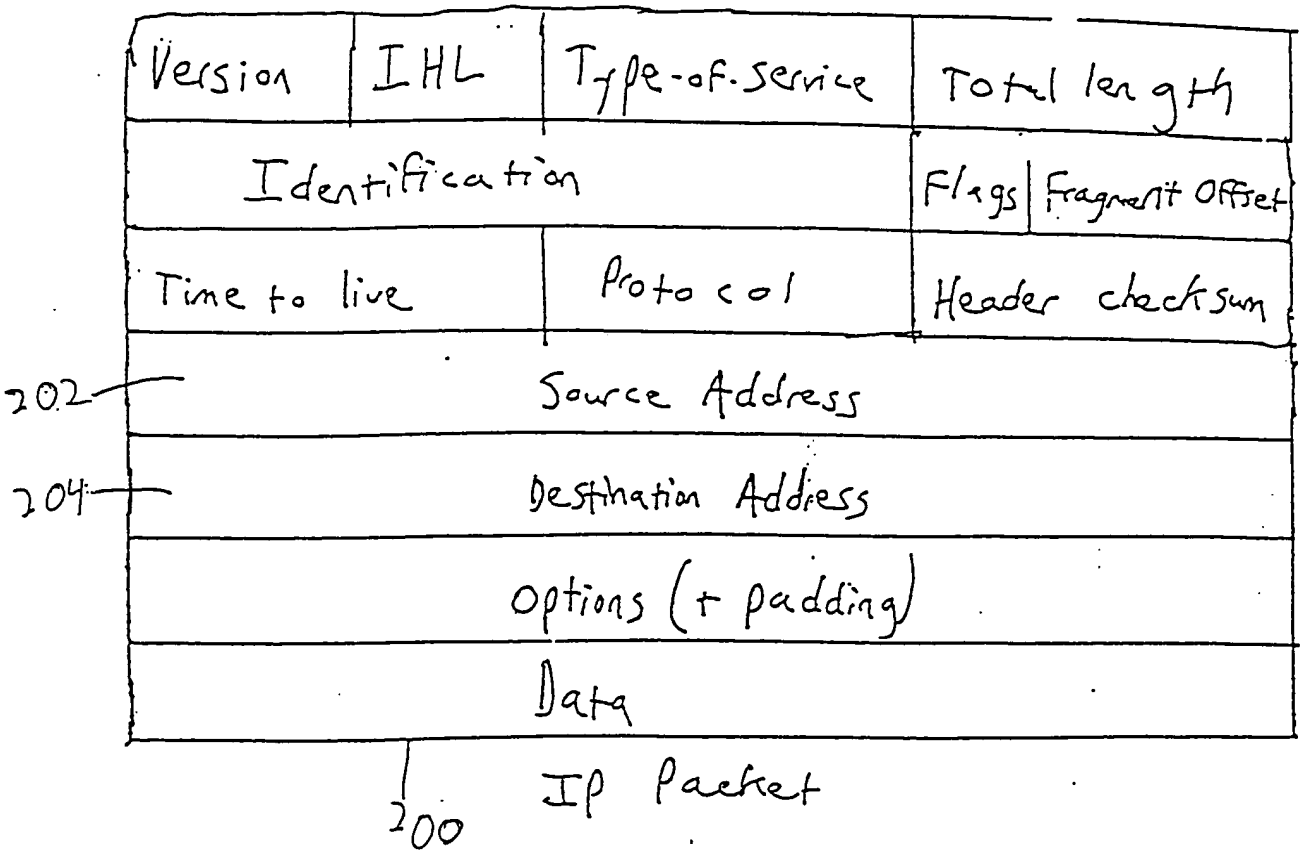
Version
IHL
Type-of-Service
Total length
Identification
Flags
Fragment Offset
Time to live
Protocol
Header checksum
202
Source Address
204
Destination Address
Options (+ padding)
Data
IP Packet
200

FIG. 5

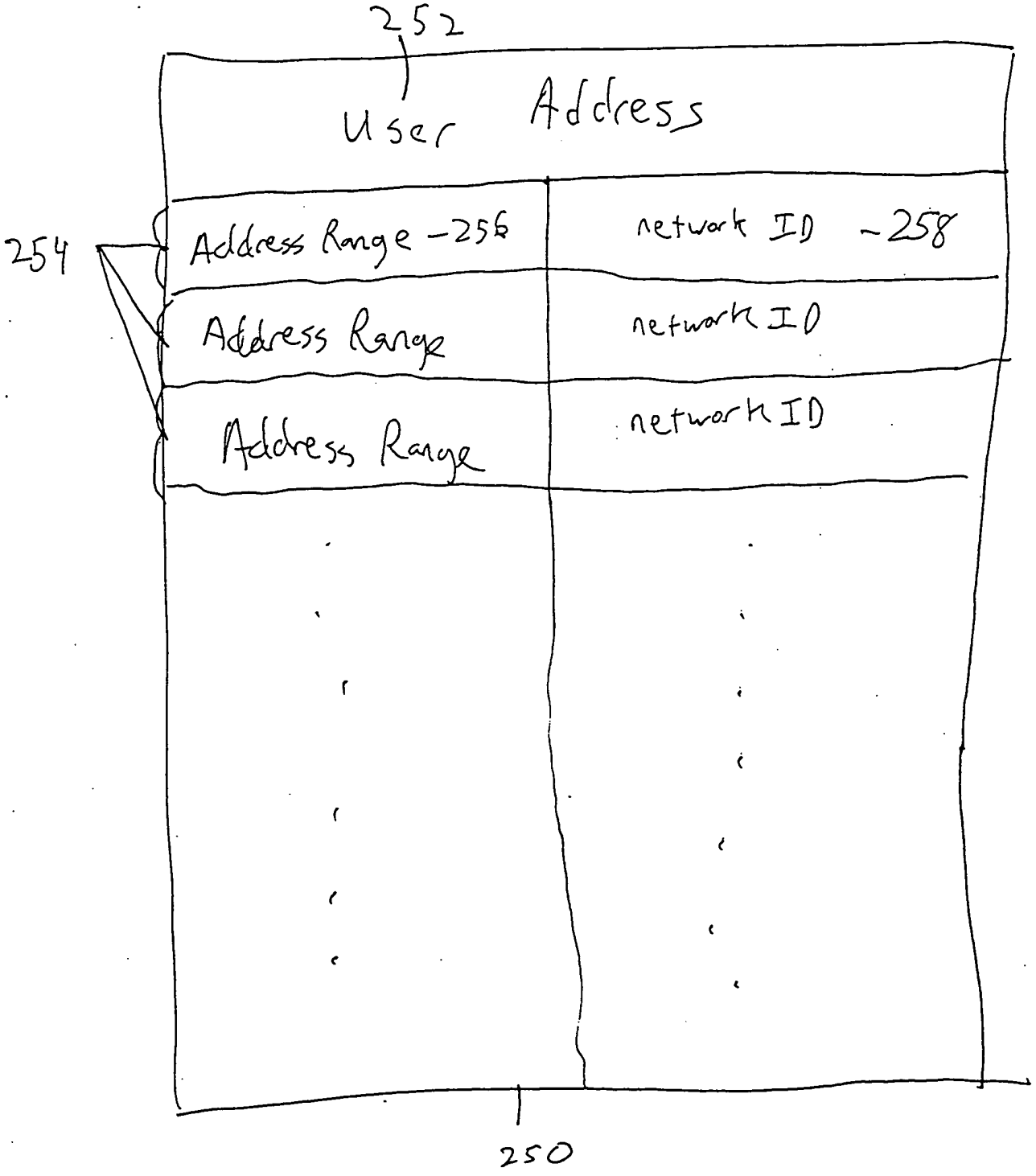
252
User
Address
254
Address Range -256
network ID -258
Address Range
network ID
Address Range
network ID
250

FIG. 6

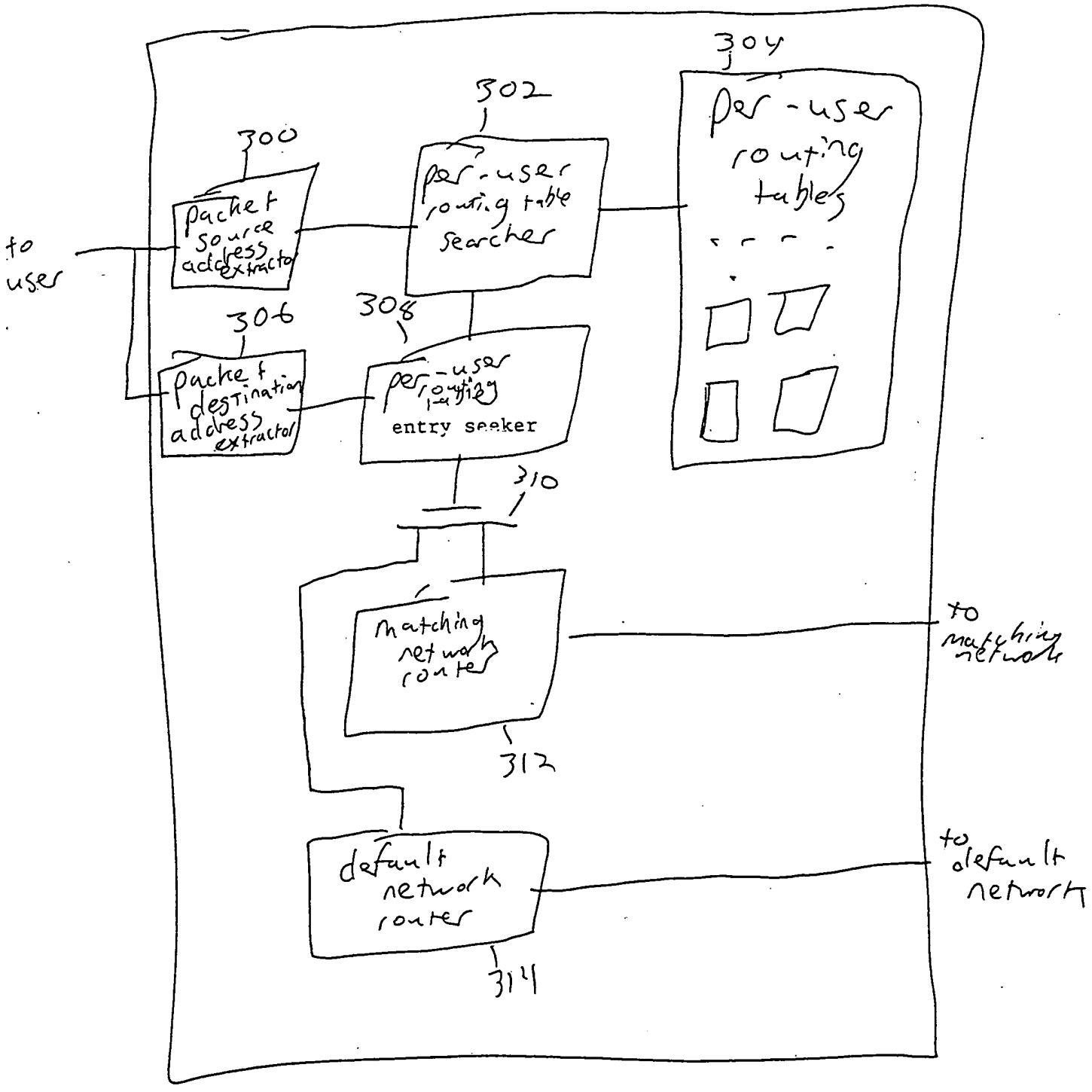
304
per-user routing tables
302
per-user routing table searcher
300
packet source address extractor
to user
306
packet destination address extractor
308
per-user routing entry seeker
310
matching network router
to matching network
312
default network router
to default network
314

FIG. 7

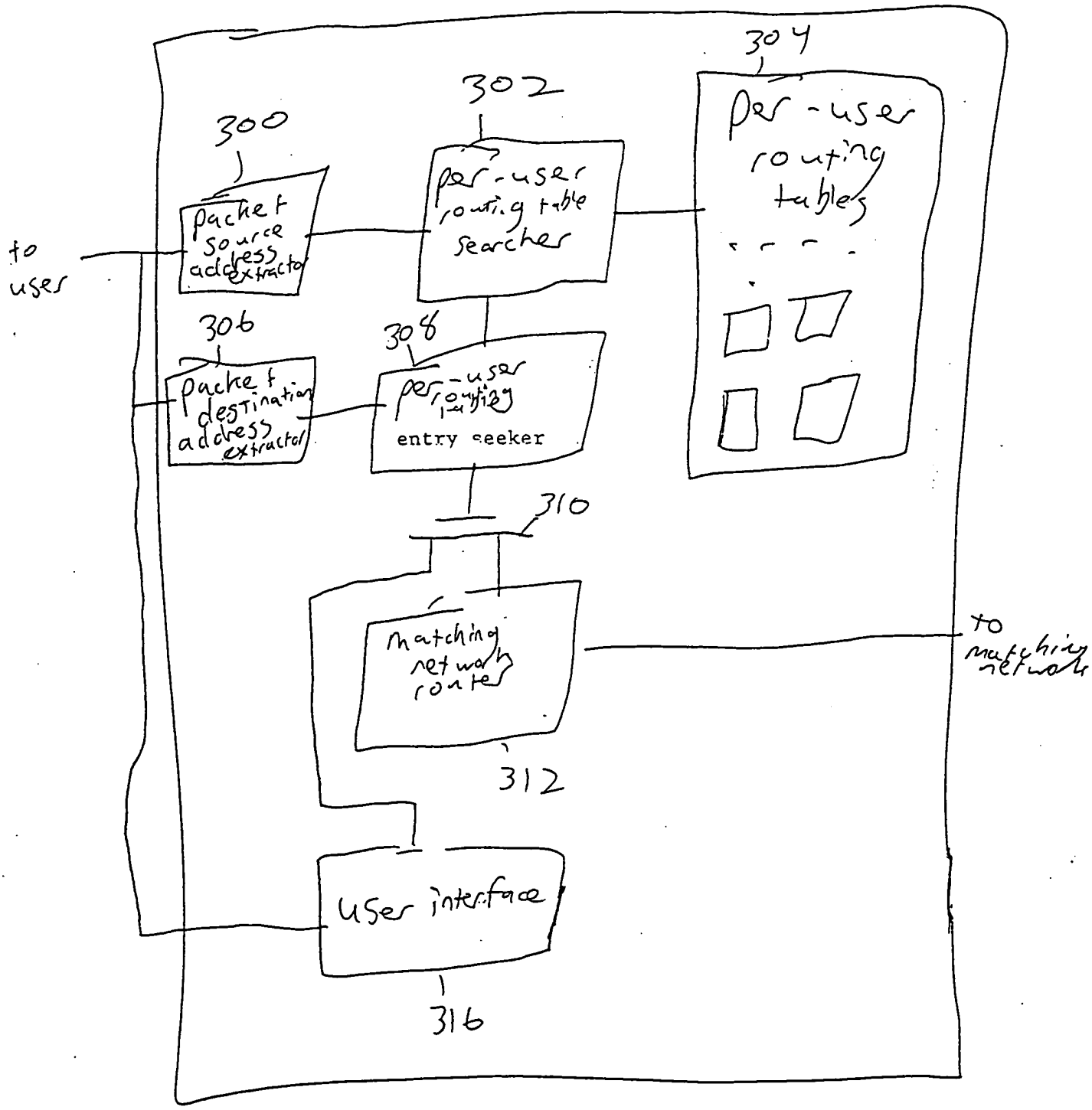
300
302
304
306
308
310
312
316
packet source address extractor
per-user routing table searcher
per-user routing tables
packet destination address extractor
per-user routing entry seeker
matching network router
user interface
to user
to matching network

FIG. 8

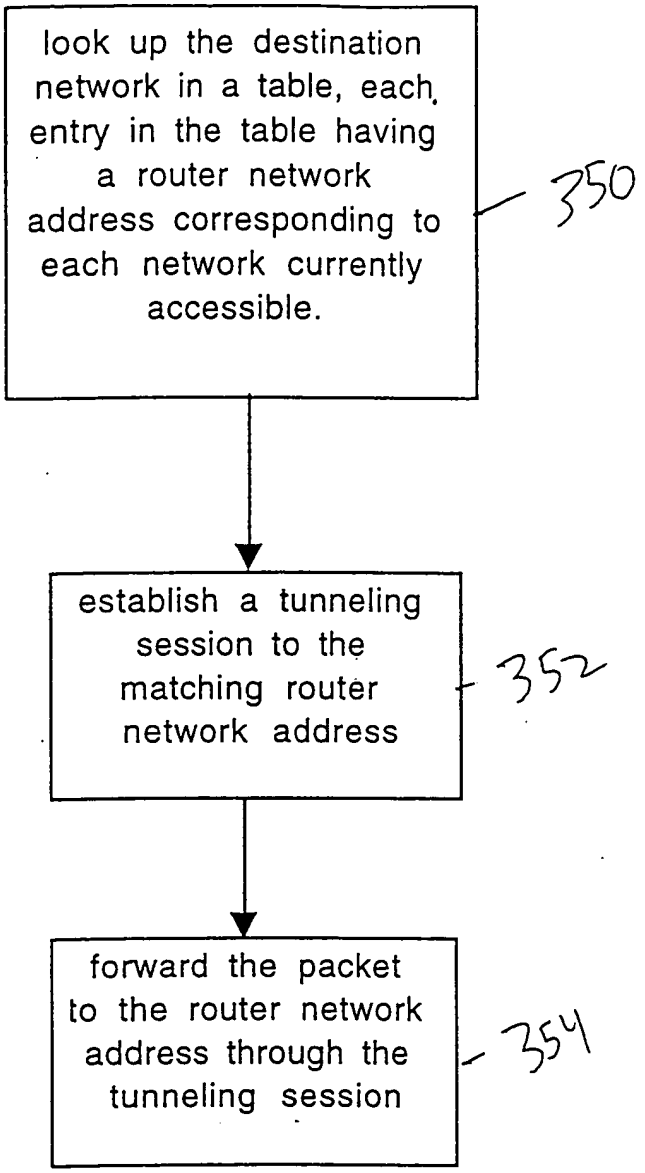
look up the destination network in a table, each entry in the table having a router network address corresponding to each network currently accessible.
350
establish a tunneling session to the matching router network address
352
forward the packet to the router network address through the tunneling session
354

FIG. 9

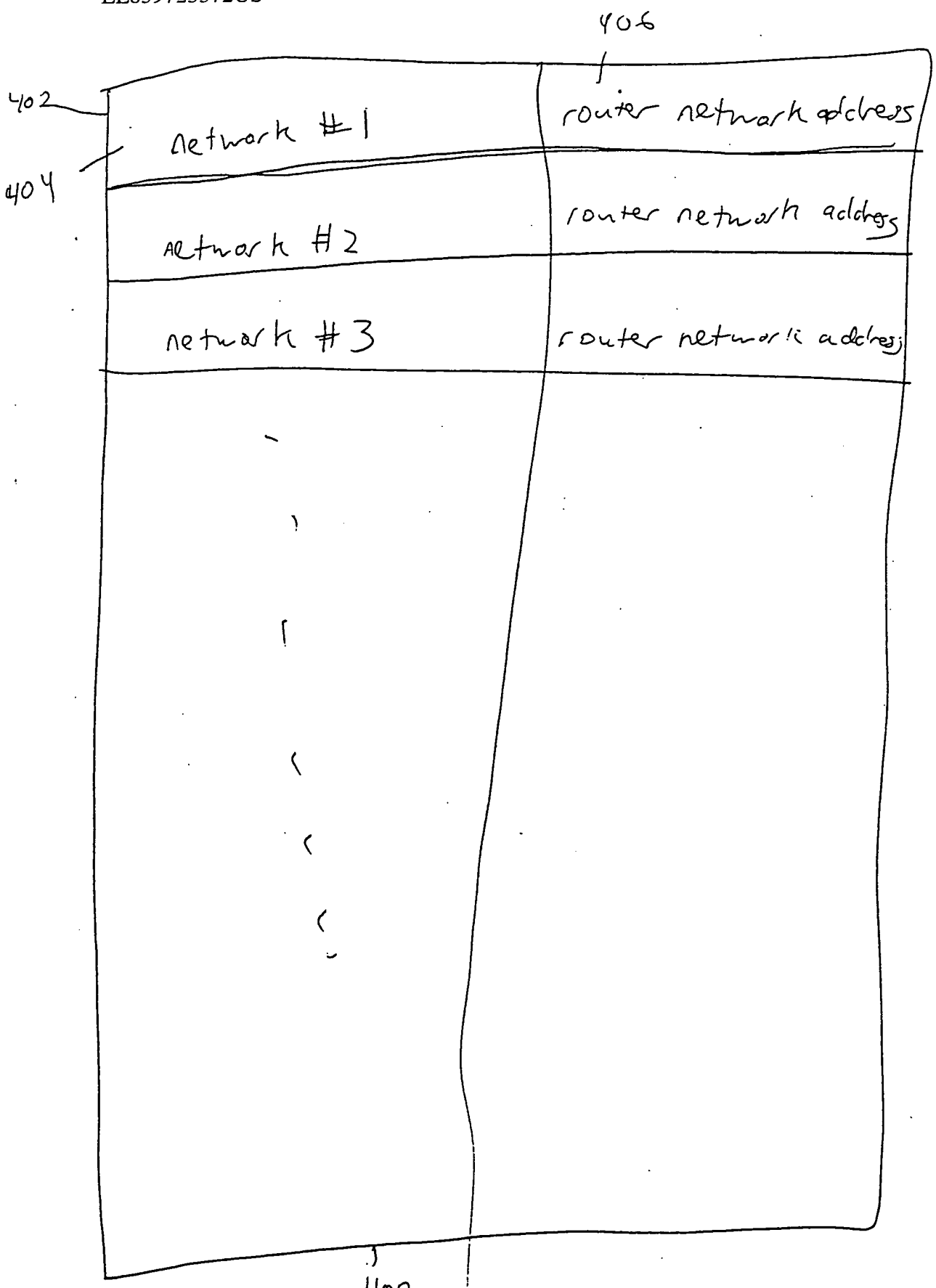
406
402
404
network #1
router network address
network #2
router network address
network #3
router network address
400

FIG. 10

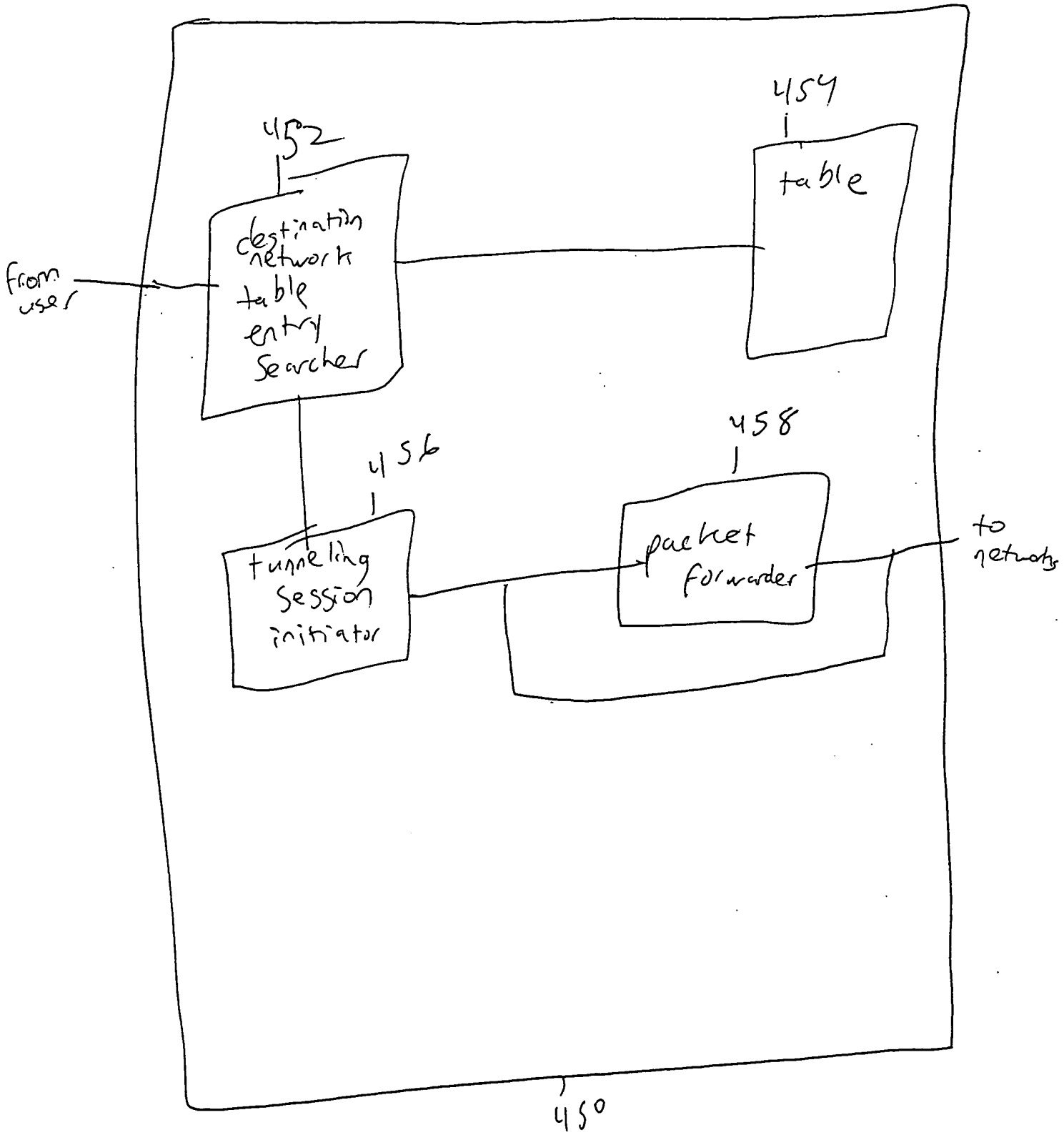
452
destination network table entry Searcher
454
table
from user
456
tunneling Session initiator
458
packet forwarder
to network
450

FIG. 11